



SELENA DE CARVALHO

RHODIUM

Element Symbol: **Rh**

Atomic Number: **45**

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Rhodium, one of the rarest precious metals, was discovered in 1803 by William Hyde Wollaston, an Englishman who studied at Cambridge. Rhodium is derived from the word rose. Its price was USD\$80,000/kg in 2010.

Industrial extraction of Rhodium is complex as the metal occurs in ores mixed with other metals such as palladium, silver, platinum, and gold. It is found in platinum ores and extracted as a white inert metal which is very difficult to fuse.

The annual world production of this element is only about 25 tonnes. The principal sources are in the Ural Mountains of South Africa and in Ontario in North America. The main exporter of rhodium is South Africa (>80%) followed by Russia. There is only one Australian reference to rhodium, Munni Munni, WA - published Measured, Indicated and Inferred Resources of 23.6 million tonnes (Mt) at 1.5 grams per tonne g/t Pd, 1.1 g/t Pt, 0.1 g/t Rh, 0.2 g/t gold (Au), 0.09% nickel (Ni), and 0.15% copper (Cu).

The development of a new generation, three way catalytic converter in 1976 by Volvo increased the demand for rhodium. The presence of rhodium reduced the amount of nitrogen oxides in the exhaust. Previous converters used platinum or palladium.

Rhodium is also used in thermocouples containing Rh in my time (10 years) working in coal laboratories where it is used for checking high temperatures up to 1800°C. These thermocouples are of course very expensive.

Rhodium is also used in plating of white gold to improve its optical impression while sterling silver is often rhodium plated for tarnish resistance.

Provided by the element sponsor Roslyn Howse

ARTISTS DESCRIPTION

I drew on the silvery appearance of Rhodium and its application within jewellery as inspiration for the symbols within this work. The graph like background is a free-styled response to a graph of fission yields for this mineral.

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